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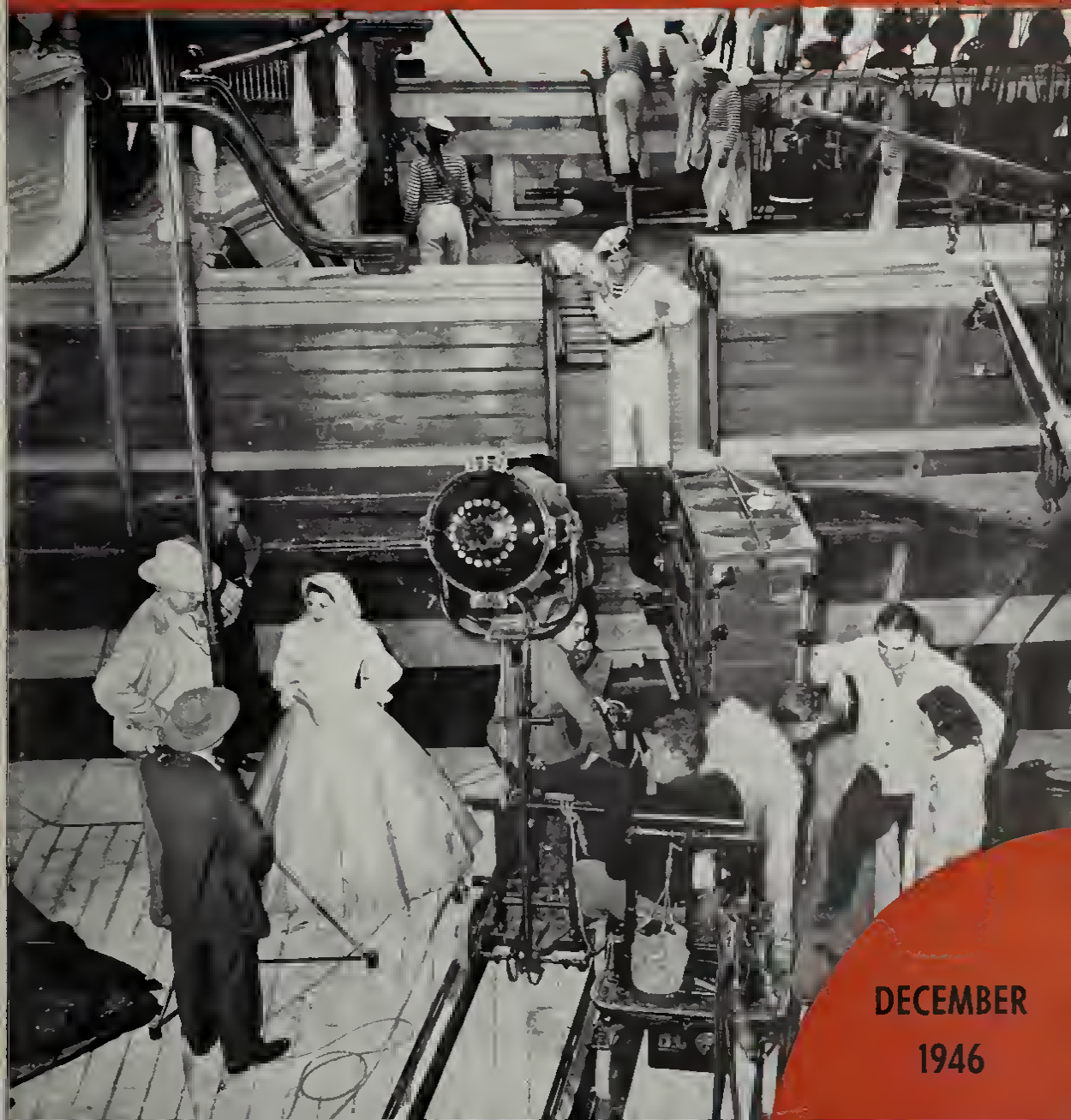

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 27 DECEMBER, 1946 NO. 12

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ON THE FRONT COVER—Director of Photography Hal Mohr, A.S.C. (at left in white hat) stands by while technicians set up the lights and equipment for a big production shot in "Fandango" at Universal International Picture, being filmed in Technicolor, stars Jean Pierre Aumont and Yvonne De Carlo.

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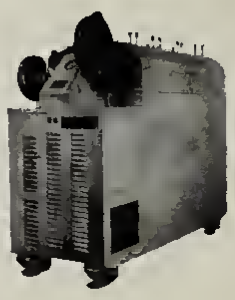

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ACES of the CAMERA

ED B. Du PAR, A. S. C.

By ROE FLEET

THIS month, in view of the 20th anniversary of soundfilms, it is appropriate that we introduce Ed Du Par, A.S.C., the motion picture photographer who was directly associated with the initial experimentation and development of sound pictures for Warner Brothers back in the mid twenties.

Prior to taking his stance behind a motion picture camera, Du Par had toured in a vaudeville act under billing of "The Dancing Du Pars, the boys with the educated feet." They finished a tour of the Sullivan and Considine circuit in Los Angeles, and Ed quickly got a job at the old Mack Sennett studios running props for director Eddie Cline. Shortly thereafter, he joined the special effects and trick camera department headed by Fred Jackman, Sr., and—although later on a production camera for a good many years—he could not resist the call to return to the intriguing work of special effects, and became associated with the Warner department in 1935 for a current 11-year tenure.

Special effects and trick photography taxes the ingenuity of the photographers at every turn, and is one of the most fascinating branches of motion picture camera work in production. Du Par, with detailed and thorough training in the first trick photographic department in Hollywood under Jackman at the old Sennett studios, figures that this supplemental type of assignment is most important to the complete photographic success of a production, and never lacking in inventiveness.

Du Par's story might better be told in the first person as he described his experiences. Shortly after joining the Sennett organization, he stated that Fred Jackman, who was devising the special effects and trick shots that added materially to the fame of the Mack Sennett comedies, asked if Ed would like to join his staff.

"Of course, I jumped at the chance," Ed explained. "One of the first jobs I had with him was down at the Palisades in Santa Monica. At that time the streetcar tracks crossed the mouth of the canyon on a bridge with telephone poling. Fred had figured out a shot with a couple of autos chasing each other as they went in and out of those pilings. In order to cover the shot we had to go up on top of the Palisades and come down a little ridge to a point where we could set up the camera. Well, we got the camera down and set up—an old Pathe, by the way—and Fred said he would go down and direct the chase while I was to photograph it. He instructed me on the speed of the crank, and departed. In the meantime, a good stiff breeze came in from the ocean, hit the cliffs, and almost blew the camera and me off the cliff for a drop of about 100 feet. Despite this, we made the shot, and I did my best to crank at the speed and still keep it steady—but it was at speed of 6, while at the time the dramatic speed was 16 and the cranking for comedy 12.

"Fred told me I had better practice speeds, as I would be doing a lot of cranking, so I got a stop-watch and camera and practiced on the different speeds to get them set in my mind and make it more automatic in judging. I almost wore out the camera practicing, but got so proficient that I could go from stop motion to 16 and back again in a scene. In those days, when you changed speeds, you had to crank with

(Continued on Page 454)

"THE KILLERS"

Teamwork On Film PRODUCTION

By HERB A. LIGHTMAN

IT happens all too frequently in Hollywood that, during the course of shooting a motion picture, the sound stage becomes a kind of arena in which clashing personalities and "artistic temperaments" lock horns, often with serious detriment to the resulting film.

This friction does not always erupt into open warfare, but makes itself felt in a kind of tug-o'-war between egos, so that each player or technician becomes bent upon making his particular specialty stand out from the rest of the picture whether it remains in key with the overall production approach or not.

Since this procedure is more often the rule than the exception, it is refreshing and professionally encouraging when, once in a cinematic blue moon, a film is completed that exemplifies the very essence of creative teamwork in picture-making. Such a film is "The Killers," a Mark Hellinger production, now in national release through Universal-International.

"The Killers," besides providing tensely-paced thriller entertainment, comes to the screen as almost pure cinema. It is a story that could not have been told with such stunning force in any other medium. More important, it is a film whose smooth blending of the various production elements is so perfect that it is difficult even for the critic to tell where the effect of one technique leaves off and that of another begins.

Such a result is not accidental. Such excellence is never haphazard. In this particular case, the smooth integration of production elements is the result of a definite point-of-view originated by the film's producer and projected with contagious enthusiasm to the players and technicians. The proof of the cinematic pudding lies, not only in the extravagant critical acclaim which has been heaped upon the film, but also in the warm box-office welcome the picture has received in playing dates throughout the country.

Mark Hellinger, producer of "The Killers," is a man whose many years of background as newspaper reporter and columnist have given him a dramatic instinct that is *realistic*, and at the same time, *human*. He is a down-to-earth, cards-on-the-table, thoroughly likable personality whose own glowing enthusiasm for motion pictures conveys itself to his co-workers with productive result.

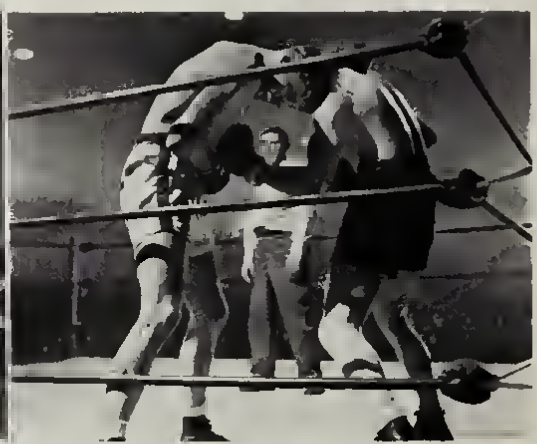
He first became interested in Ernest Hemingway's story, "The Killers," when it was initially published in 1927, and he felt that it would make a smashing opening sequence for a motion picture. In later years, after he had become a film producer, he tried to interest several studios in filming the property, but when he mentioned the author's price ($50,000), studio heads invariably began to talk about the weather.

Independent Set-up Scores

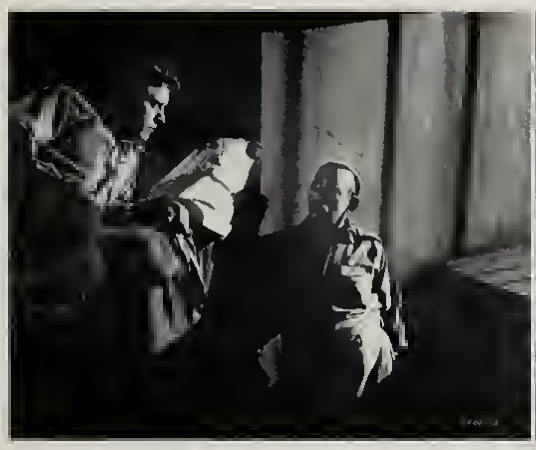
It wasn't until Hellinger joined Universal-International as an independent producer that he was able to draw a responsive ear for "The Killers." Then, lo and behold, the studio promptly bought the yarn without any quibbling about price, and told him to go ahead and film it. All this in the face of general opinion within the industry that this particular short story could never be successfully expanded into a feature-length film.

It is no wonder, therefore, that Mark Hellinger is highly in favor of the independent producing set-up. "Under the usual studio system," he points out, "a producer is often handed a story for which he has no personal enthusiasm. He turns it over to a director who grudgingly agrees to 'do his best with it'—and the other technicians, sensing this lukewarm attitude, are similarly uninspired about the whole thing. By way of contrast—when the independent field functions correctly, a very happy state exists. The producer does not make a picture unless he is personally enthusiastic about the story, and it is that enthusiasm, carrying over to the other technicians, that results in a well-integrated film."

In the case of "The Killers," once the story had been purchased, there remained the job of expanding it into a



Into a wayside lunchroom (at left) come two paid murderers stalking their prey. This situation forms the opening sequence of "The Killers," Mark Hellinger's outstanding film adaptation of Ernest Hemingway's short story. Through flashbacks, we explore the life of the murdered man, including his career as a boxer (at right). "The Killers" is an outstanding example of effective teamwork between the various technicians engaged in production.



Photographic treatment of "The Killers" sets a new standard of realism that is at the same time artistic. In the prison-cell sequence (at left) a single shaft of light was used as illumination to sharply point up the dramatic situation. The burial sequence (at right) was shot with OUT OF-BALANCE lighting making dramatic use of black and white contrast. Cinematographer Woody Bredell A S C keyed his cinematic approach precisely to story's dramatic requirements.

suitable script. It was planned to retain the original story intact for the first sequence, and construct a complete background for the action shown. There were to be no stars in the picture, a situation that is usually a definite handicap at the box-office. In this case, however, it worked as a distinct advantage, since scenarist Anthony Veiller was able to write the story as it should be written, without having to rearrange the plot to fit the talents of specific stars.

Besides the original Hemingway story, there were certain other dramatic situations which producer Hellinger wanted to include in the screenplay—notably the deathbed confession of gangster "Dutch" Schultz, and the details of a daring payroll robbery which occurred several years ago. Blending all these elements, the scenarist evolved a tight, hard-hitting screenplay that consistently retained the atmosphere of the original Hemingway yarn.

Production Jig-Saw Puzzle

As the script was being polished, Hellinger began to assemble his technical staff for actual shooting of the picture. He had been very favorably impressed by the cinematic quality of "Phantom Lady," a thriller that Universal made several years ago. Fortunately, he found that both the director of that film (Robert Siodmak), and its cinematographer (Woody Bredell, A S C) were available for his unit.

A preliminary conference followed in which the production was discussed from every possible angle. Both the director and cinematographer had suggestions to offer on treatment, and Hellinger encouraged them to "kick the story around" and let their imagination play with it. "This method worked like a charm," he recalls, "Director Siodmak deserves special credit for his contributions to the screen treatment. Usually, when you hand a director a script, you are happy if he can bring out 85% of the potential dramatic values it contains. But when you give the script to a director like Siodmak and he gives you back 125%—well, you've really got something there."

Meanwhile, cinematographer Bredell was casting about for a special photographic treatment to bring out the best in the story. Extensive casting tests had to be made to select the right girl for the lead. As he worked on these tests and experimented with different styles of lighting, a certain forceful photographic quality began to find its way onto the film. A magnificent camera mood evolved, a mood which later permeated the entire picture.

With the producer, director and cinematographer thus inspired, enthusiasm soon became contagious. The other technicians and players became eager to do their best. From the very beginning, something in the air indicated that this was going to be an outstanding film. So confident was Hellinger, that he was willing to show separate scenes and sequences to the press even before the film was completed—a risk that is rarely taken in criticism-conscious Hollywood. The simple truth of the matter is that one good technical job encouraged the other technicians to do a good job also.

"It's like being used to playing golf with a bunch of duffers," Hellinger points out, "When all of a sudden you find yourself playing with a set of pros, you try to give the game all you've got. In an all-around good picture, every phase of production looks good. But if, on the other hand, a picture is generally poor, brilliant direction, striking camerawork, or any other one outstanding phase of production usually goes unnoticed."

The Director and the Camera

Rarely has there existed such perfect *rapport* between cameramen and director as characterized the filming of "The Killers." Siodmak is a director who really knows his camera and uses it to paint a dramatic picture in the same way that an artist would use his brush. He designs all of his own camera set-ups in closest cooperation with the Director of Photography.

"The creative use of the camera is a lost art," he maintains. "We have let ourselves over-glamourize motion picture photography to the point where it becomes unreal. Actually, there is no such thing as photography that is in itself *good* or *bad*. All that is really important is that the camera convey something expressive within the scene."

Siodmak prefers to follow a screen story through every phase of production. He likes to be in on the "heartbreak" of writing the script. He is interested in every technician's job, and he appreciates what they all contribute to the film. Similarly, he feels that everyone working on the picture should be familiar with the director's conception of the story. He works out his key scenes in precise detail before shooting begins, but relies entirely on his own impressions during filming to fill in between these key scenes. He feels that the director is the one technician who can really see the overall concept of the film. Therefore, it is this basic production pattern that must be followed. However, within that pattern, the cinematographer and allied technicians should be left free to experiment and create forceful effects.

"I am happy if, out of an entire feature, I can place on film 500 feet of pure cinema," Siodmak explains. "Art is nothing more than the elimination of unessential details. Therefore, the filmic presentation should always leave something to the audience's imagination. In modern production it is a temptation to overdo the use of unusual techniques, such as the moving camera. In 'The Killers,' rather than use unmotivated camera movement, we employed a relatively

(Continued on Page 458)

THE M-R "BRUTE"

A New Super High Intensity Carbon Arc Lamp

By PETER MOLE

The faster the film the more light the cinematographer uses. Although a paradox that statement is essentially true. A clearer statement would be to the effect that as better tools become available, the cinematographer uses them to improve his work. With an increase in film speed he may use half the light or he may double the amount. His goal is *dramatic effect* and he does it with *light*. A study of the advances in cinematography during the past ten years will more than justify his position.

The new Mole-Richardson Type 450 carbon arc lamp was designed and built as a result of the insistent demand from cinematographers for a light source with twice the intensity of the present Type 170 M-R Hi-Arc. The type of carbon trim, current, voltage, and optical system were all chosen or designed with the requirements set forth by the cinematographers themselves as a goal.

Fig. 1 illustrates how these requirements were met. With a 48° beam spread, which is approximately full flood, the Type 450 gives exactly double the lumens of the Type 170. With 12° beam spread on the Type 450 and 10° beam spread on the Type 170 the ratio is further increased.

Fig. 2 illustrates the comparison between the Type 450 and the Type 170 lamps in light intensity, within a 20 ft. diameter spot. This increase in penetrating power gives the cinematographer a lighting tool with which he can produce streak lighting, shadow detail, penetrate the deepest of sets, boost high levels of daylight or create a "one source" lighting effect even when the general set light levels are high. By operating at full flood position he can cover areas with the one lamp.

Fortunately this 100 per cent increase in light output was obtained with only 50 per cent increase in current. The Type 450 unit operates with a 16mmx22" super high intensity positive MP studio carbon and a 17/32"x9" cored Orotip negative carbon burning at 225 amperes and 75 arc volts, whereas the Type 170 lamp burns a 16mmx20" MP studio positive carbon and a 1/2"x8½" MP studio negative carbon at 150 amperes and 67 arc volts.

The newly designed Fresnel type condenser lens on the Type 450 lamp has a curved surface and is of 24" diameter which gives it a greater light pick-up angle than the 20" diameter flat surface condenser of the Type 170. The main advantage of the larger diameter curved surface condenser is that it provides for a greater arc-to-condenser distance at various beam divergencies, thereby minimizing the danger of condenser breakage from the increased heat.

The Type 450 lamp head is not just a modification of the Type 170. The 100% light increase and 50% current increase created problems of heat transfer and ventilation requiring a radical departure from the conventional rotating high intensity lamp design.

The arc control motor, motor rheostat, arc switch and pin plugs were all removed from the heat of the body of the unit and located in a separate compartment on the rear lamp casting. Inas-

much as the balance of the carbon feeding mechanism is mounted on the front of this same casting, the whole forms an integral unit which may easily be removed for servicing.

By these changes in design it was possible to build a lamp head, capable of continuous operation at 225 amperes, with no increase in length, only 4" increase in diameter and slight increase in weight over the Type 170.

The color quality of the light from the Type 450 is essentially the same as from the Type 170 and when used for daylight balance, as in shooting color, the unit should be equipped with a Y-1 filter.

A number of the Type 450 lamps have been completed and are now undergoing a production test routine in the studios. Any additional knowledge gained from this preliminary work will be incorporated into the final design which will be set for production in the near future.

In order to receive the most benefit from this production work Directors of Photography and A.S.C. members who are using the new Type 450s are being interviewed. Some of their comments are paraphrased as follows:

John W. Boyle: "We used the 450 on a Cinecolor picture at Hal Roach. We were on a theatre set and wanted a shot of the audience from the stage with a light level to indicate that the theatre was well illuminated. We set the 450 on the stage and adjusted the beam spread to cover an audience of about one hundred and fifty people. With the use of scrim we were able to control the light intensity from foreground to background."

"What other lamps were used?"

"We used a few lights here and there for balance, but the main source of light was from the 450. In that particular shot the 450 replaced several other lamps because of its ability to carry from the stage to the back row of seats."

Wilfrid Cline: "We used the 450 on a Technicolor dance number at Warner Brothers. It is an excellent source as a main front light unit when operated at full flood position. We adapted a set of venetian blinds to it and were able to dim it in that manner.

"A most interesting use, however, was for a special effect we were after and were able to accomplish because of the 450. We wished to project a 20-foot diameter star pattern onto the floor with sufficient intensity to overcome the general set level and to enhance the effect by gradually dimming the light around the star pattern. We hung the 450 about 30 feet above the set pointing straight down. A few feet below the lamp we hung a board with the star shape through it. The effect was perfect."

"Did you try a Type 170 for that effect?"

"Yes, we did, but it was not powerful enough."

NOTE: Fig. 2 shows that the Type 450 will deliver three times as much light as a Type 170 in a 20-foot diameter circle at 30 feet distance.

Sol Polito: "We wanted a lamp for a particularly large set to be shot with black and white film at RKO-Pathe Studios. It covered the entire area of stage 15, and we shot from the adjacent stage 14. There was considerable open area in the foreground with few characters and a lone wagon. The problem was to find a single source of sufficient penetrating power and light volume with which to illuminate the entire area in order to obtain single shadows. The 450, adjusted to full flood position, was placed about 30 feet and 50 to 60 feet from the action. It did the job in fine shape."

"You used other lamps, of course?"

"Yes, for fill light, balance, behind windows, etc., but the main source of illumination was the 450. It produced just the effect we were after. In fact we had to use scrim in certain areas to cut down the light."

"Would you say that most of the photographic light came from the 450?"

"Yes, it did in this particular shot. As a matter of fact when you light that lamp everything else seems to be out."

Ray Rennehan: "We are using the 450 on a current Technicolor picture at Paramount. On certain shots it provides the main body of front illumination. It is possible to cover an area with the 450 and build up to it with the other sources in a more satisfactory manner than if we used a source of lesser power. This is particularly true if a one-source effect is desired.

"The need for a more powerful lamp has long been recognized. This does not indicate that more overall light is required than is available at the present time. As a matter of fact, it could mean that in certain cases the power used for a given shot may be less because of the wider latitude of lighting media."

The Type 450 lamp is not expected to revolutionize the art of cinematography. It is a new and more powerful tool with which to make better pictures. Its increased power may mean double the light on the set, and it may mean half of the light. In either case it is a small factor. *The picture is the thing.*

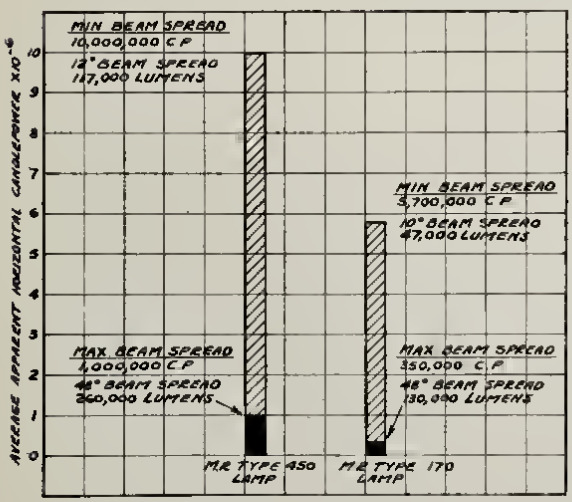


Fig. 1. Chart indicating relative illumination characteristics of MR-type 450 lamp burning the 16mm. super H.I. studio positive at 225 amperes, and the MR-type 170 lamp burning the 16mm. H.I. studio positive at 150 amperes.

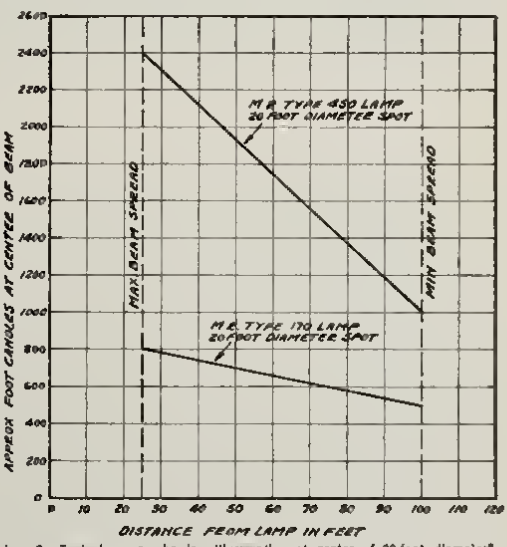

APPROX. FOOT CANDLES AT CENTER OF BEAM
MAX. BEAM SPREAD
MIN. BEAM SPREAD
M.R. TYPE 450 LAMP
20 FOOT DIAMETER SPOT
M.R. TYPE 170 LAMP
20 FOOT DIAMETER SPOT
DISTANCE FROM LAMP IN FEET

Fig. 2. Typical curves showing illumination at center of 20-foot diameter* spot at various distances from MR type 450 lamp burning the 16mm. super H.I. studio positive at 225 amperes and MR type 170 lamp burning the 16mm. H.I. studio positive at 150 amperes.

* The diameter of the spot is defined as the diameter at which the illumination is 10% of the maximum illumination present at the center of the spot.

THE LATE DOUGLAS FAIRBANKS, SR. AND RALPH STAUB, A.S.C.

CAMERA AND TRIPOD ON HIS SHOULDER

By HAL HERMAN

WITH movie making now advanced to the point where a throng of technical specialists is on hand to supervise every fine detail of production, the experiences of Ralph Staub who has often been called a "one man production company" because of his operations in the short subject field are both interesting and refreshing.

Beginning as an eager young camera assistant at the age of 16 with Ruth Roland more than 30 years ago, Staub has parlayed his enthusiasm, diplomacy, and resourcefulness into a highly successful career. Also, he has encountered just about every type of problem it is possible for a cameraman to run into.

He's spent about fifteen of those years in his present post turning out the popular "Screen Snapshot" reels for Columbia Studios. Altogether, he has made 614 one- and two-reel shorts covering every conceivable subject from snow covered Mt. McKinley, in Alaska, to the activities of Hollywood celebrities, racing thrills, symphony concerts on the desert, and Mack Sennett comedies.

In his comfortable office at Columbia, Staub is able to plan his work for the future with first hand knowledge of changing trends in the short subject medium in which he has so long had a hand. Also, today, he has the assistance of a full technical and production crew whenever he needs it.

"But it wasn't always like this," Staub explains. "In the early days I had to do everything myself. In addition to shooting the camera, I was also my own writer, director, location manager, prop man, makeup artist and wardrobe man.

"There were times," he admits with a grin, "when I wished that I were quadruplets. But somehow, by improvising and using a lot of persuasion, drafting the help of chauffeurs, bellhops, waiters or anyone else I could find, the job was done."

The experiences which Staub has lived through since he first slung an ancient Leonard A-1 camera (later developed into the Mitchell) over his shoulder in 1923 and started out to make movies on his own, would make a fascinating book—if he ever took time out to write it. It would provide numerous worthwhile tips to any cameraman planning to shoot newsreel type shorts on current events, prominent personalities or even travelogues.

Naturally, Staub agrees, the modern, skilled technical men now at his disposal do make his work in filming short subjects easier and faster than it was in the past. But there was a challenge in making those early day shorts almost alone which kept his job always interesting and exciting.

"In those days," the veteran cameraman-producer recalls, "I never knew what situation I might run into when I started out on a job alone. I often worked on a rather limited budget and had to shoot a reel that was interesting and entertaining—and still get it fast.

"I remember the time I went out to shoot some footage on the late Jean Harlow, who was one of my favorites and a grand person to work with. She had just finished doing "Hell's Angels" when I called and made the appointment. I arrived at her home with my camera, reflectors, props and a lot of other equipment, and we promptly went into a huddle to figure out the action for the scene.

"Before we were through we had dreamed up a rain sequence which, today, would require a crew of twenty to shoot. I had to improvise and do it alone.

"The action called for Miss Harlow to step out the front door of her house and snap open an umbrella as she started down the walk. Each time she stepped outdoors it would start to rain. And when she opened the umbrella, the rain, for comedy effect, would stop."

To shoot the scene Staub propped his reflectors in place on the lawn,

gave Jean's chauffeur a five minute course in cranking the camera (yes, they cranked 'em in those days) and himself handled the tricky business of turning the rain on and off by bending and releasing a length of rubber garden hose attached to a nearby hydrant.

"Not much of a setup, I'll admit," Staub confesses today, "but that scene turned out okay. It was good for plenty of laughs when it hit the theaters. Improvising enabled me to get it without a lot of delay and expense."

During the years he has devoted to filming informal reels on screen stars at work and play, in and out of the studios, Staub has found that diplomacy and the ability to get along with people pays a huge dividend.

"You've simply got to be tactful," Staub contends. "And if you make your reels novel and refreshing enough to interest your subjects as well as the prospective audience, you'll find them a lot more cooperative. It's important, too, to get your scenes quickly and with as little fuss and bother as possible."

Although he has worked through the years with nearly every big name star in Hollywood, it is a well known fact that Staub has never worn out his welcome. That is a record of which he is justly proud.

"I always plan my shooting in order to save the stars' time and make it as easy for them as I can. On several occasions I've even called in the players' favorite makeup men or hairdressers—so they would be confident of looking their best for the camera," he added.

"When I promised a couple of the stars, Marlene Dietrich and Jack Benny, that they could see the completed reels in which they had appeared, I made very sure that they did view it before release."

Such consideration of his principals, whether they were film stars or sports or political figures, Staub says, has enabled him to build a lot of good will and keep these personalities ready to work for him again in the future.

Among the more than 600 subjects which Staub has shot or supervised, or both, are reels on swank movie affairs, parties at the Cocoanut Grove, bathing beauty parades at the Ambassador Lido Pool and Palm Springs, floor shows and glamor girls at filmtown night spots, the bicycle races and more recently the Sidney Skolsky party at Schwabs Drug Store and a birthday party for a horse given by cowboy comic, Smiley Burnette.

Staub is credited with being the first cameraman to shoot a Hollywood newsreel type of short on a studio stage. That was in 1924 when he was filming a reel titled "How Movies Are Made." He shot on the set, right beside the regular production camera and enjoyed the fullest cooperation of cinematographers and such name directors as Frank Capra, Cecil B. DeMille, Al Green and Michael Curtiz.

Providing an intimate, behind-the-scenes glimpse of their screen favorites at work, the reel proved highly popular with theater-goers. Staub secured the footage largely through his diplomatic approach and presentation of his ideas to the directors and stars concerned. They knew in advance just what he wanted and why he wanted it.

"A long time ago," Staub continued, "when Richard Barthelmess was at work on 'The Patent Leather Kid' (1925) I decided to make a short reel of action scenes showing him in training for fight sequences in the film. I thought the novelty of a screen favorite slugging it out with a professional boxer would be different and interesting."

Staub went over to the outdoor ring where Barthelmess was sparring with his trainer, Nate Slott, and made a few long and medium shots to start with. Then he ran into the problem of trying to get some important closeups of the action. This was in the days before huge camera cranes were generally available.

"In order to film a number of closeups in which gloves and arms would smash close past the camera lens," Staub said, "I had to resort to more improvising. "I built a special rack fastened to my shoulders with straps, which held the camera firmly in place as I moved about the ring. By stopping the lens down in bright sunlight I was able to move smoothly in from medium shots to closeups of faces and gloves with good effect—and still keep them in sharp focus. The arrangement enabled me to add a few zoom and dolly shots—all on foot. The effect on the screen was startling—in consideration of the way it was filmed, and not at all jumpy as I had feared."

An entirely different problem arose while Staub was filming a few scenes of the late Carole Lombard at her home. This time he drafted the star's mother, Mrs. Peters, to hold the reflectors serving as a backlight and had a butler pull him along the sidewalk in a small boy's wagon for a dolly shot. A few days later at the home of Lois Wilson, then at the height of her fame, he borrowed the star's dresser mirror to replace a missing reflector, and used a couple of old lace curtains as a scrim to soften the shadows on Miss Wilson's face in a garden scene. Of course he was directing and shooting these scenes as well as dreaming up the script and doing his own prop work for the occasion.

Many years later Staub directed Phil Regan in a Technicolor picture, "Romance of the West," for Warner Brothers. Here he ran into another situation which his past experience as a "one man operator" helped solve. He was trying to get a scene at the foot of a huge falls in Yosemite National Park. The spray from the falling water kept fogging the lens. Shooting was stopped cold and the company faced with an expensive delay. Finally Staub rigged up a piece of plain window glass in front of the camera and poured a continuous stream of water over the glass to kill the spray. With this improvised setup the scenes were filmed in short

(Continued on Page 462)

Keystone Hotel, produced and directed by Staub for Warner Brothers.

The late Jean Harlow as she appeared in a Screen Snapshots clip for Staub.

DR. WILBUR B. RAYTON

DR. WILBUR B. RAYTON PASSES

Outstanding Optical Engineer

Dr. Wilbur B. Rayton, A.S.C., director of the scientific bureau of Bausch & Lomb Optical Company and one of the foremost optical engineers of the nation, died suddenly in San Francisco on October 31st, while on a business trip to California. A week before his death, Dr. Rayton delivered a paper, "A New Series of Camera Lenses for 16mm Cinematography," at the convention of Society of Motion Picture Engineers, and remained in Hollywood to be guest speaker at the clubhouse of American Society of Cinematographers on October 28th to deliver a talk on "New Developments in Motion Picture Lenses."

A member of the Bausch and Lomb firm since 1908, Dr Rayton was appointed head of the scientific bureau in 1926. Only two months ago, he received the Navy Ordnance Development Award for "distinguished service to research and development of gunfire control equipment" during World War II

Dr Rayton was one of the recognized authorities on motion picture optical engineering and development, and widely known in the film industry for his most important contributions on development of lenses and practices for nearly 40 years. His collaboration in the development of such items as the range-finder, multiplex mapping equipment, height finders, the Keratometer (for measuring Corneal Astigmatism), microscopes, Orthogon (spectacle) lenses, aviator goggles with corrected lenses, etc., are numerous.

In the field of photography, some of his outstanding contributions include Raytar lens series of motion picture photographic lenses; Baltar series of 35mm motion picture photographic lenses, super-Cinephor series of motion picture lenses (both coated and uncoated); 20mm. f:1.5 lens for 16mm cameras; 50mm f·1 6 projection lens; aerial camera lens, including the famous Metrogon six-inch lens used by the U. S. Army and Navy for aerial reconnaisance—also the 24-inch f 60 Tessar lens; astronomical photographic lenses, some in use in the Mount Wilson Observatory: 40-inch, long-focal length telephoto lens.

Wide angle lens attachment for amateur motion picture cameras; a series of X-ray lenses, f·2.0 and f·1.5; designer of a condenser system used in wide field film projection; polarizing photometer for measuring light intensity and density (this has had wide application for sound track on motion picture film); the densitometer, and introduction of the first anastigmatic lens for motion picture projection. All of the above inventions and applications are credited to Dr. Rayton by Bausch & Lomb as among his more important contributions to optical science and industry.

Dr. Rayton, 61, was born in Rochester and attended Brockport Normal and Livonia high school prior to entering Syracuse University in 1901. Upon graduating from the latter with an A. B. degree, he taught physics in high schools for a few years prior to joining Bausch & Lomb in 1908. As a member of the Scientific Bureau of the company, which he headed for the past two decades, his accomplishments were many in contributing to the optical advancement of motion picture technique.

In 1933, he was awarded an honorary degree of doctor of science by University of Rochester; and the same honor was bestowed on him by Syracuse University in 1942. During the early stages of World War II, he worked closely with Maj. Gen. George W. Goddard, Army Air Corps photographic section, on an aerial lens designed to take 18 inch negatives that made possible the mapping of enemy terrain and entrenchments from photos snapped at heights of four miles.

For many years, Dr. Rayton was an associate member of American Society of Cinematographers; and was a Fellow Member of Society of Motion Picture Engineers. Other memberships included the Optical Society of America, American Association for the Advancement of Science, Photographic Society, and American Society of Photogrammetry. He is survived by his widow, a son and a daughter.

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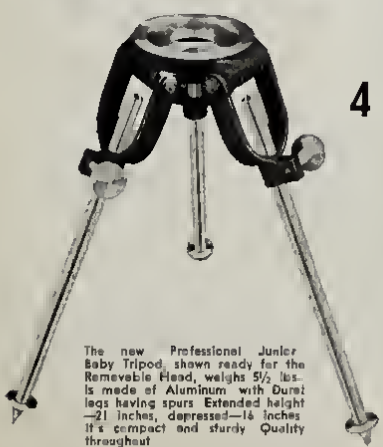

4

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Adaptability here are illustrated (1) the friction type removable "Professional Junior" tripod head that may be affixed to (2) the Standard Tripod Legs Base and (3) the "Hi-Hat" (Low Base Adaptor) and (4) the new all-metal "Baby" tripod by simply fastening the finger-grip head fastening nut that is shown under it. Note the positive-locking, fluted, height-adjustment knobs and tie down rings of the Standard Tripod Base which is standing on a Triangle Triangles prevent slipping on or marring of polished floors

FRANK C. ZUCKER

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Cinema Workshop

(Continued from Page 444)

trast between the light and shade areas of the composition. This contrast is especially unflattering in close-ups of persons. In order to soften the harsh effect and fill in the shadow areas, we use simple reflectors that can be easily constructed by pasting squares of silver or gold foil onto plywood flats.

Correctly used, these reflectors impart a professional *finish* to the film—but if over-used, they may cancel out shadow areas almost completely, creating a flat and undramatic result. Be careful to use your reflectors intelligently, since it takes a certain amount of soft shadow to give a pleasant modeling to faces.

There are two kinds of reflector surfaces: the hard variety (silver), and the soft (gold). Soft reflectors give a nice smooth quality in close-ups, but should not be used in color cinematography, since they reflect an unusually warm color of light.

Closely allied to reflectors in usefulness to the cameraman are *screens* of gauze netting which are helpful in diffusing sunlight when it falls too harshly upon faces in close-ups. These screens, either single or double depending upon the amount of diffusion desired, are suspended out of camera range, between the sun and the subject, and function to break up and soften the harsh direct rays of the sun.

Often unwanted reflections from some surface such as a white wall, etc., may cause your subject to squint. This glare can be softened in many cases by placing a *gobo* (black square of wood or plyboard) between the subject and the offending surface.

For diffusing close-ups a diffusion disc is very helpful—but a layer or two of gauze net placed before the lens will give almost the same effect. In using net as a diffuser, be careful that it is well-shielded, as sunlight falling directly upon it will cause flare. Also, be sure that the net is placed as close to the lens as possible, otherwise the criss-cross pattern of the cloth may come into focus just sharply enough to be noticeable.

Motion Picture Composition

Volumes can, and perhaps *should*, be written on the subject of composition in motion pictures. We cannot hope in this small space to discuss the subject at great length, but feel it necessary to present a few basic rules for making your screen compositions more effective.

Firstly, we must not think of cinema composition as the static thing it is in still photography. Screen composition is fluid and ever-changing, therefore, it requires a more precise, more versatile kind of planning in order to insure visual patterns that will remain interesting throughout the action of an entire sequence.

But aside from adding interest to the visual presentation of the story, the function of effective composition is to lead the eye directly to the most important point in the scene. For this reason, action should be so staged that the lines of the setting in which it is played will lead to the areas of greatest dramatic importance.

A *closed* composition is one which is framed on all sides (by trees, etc.) in such a way as to prevent the eye from straying from the focal point of action. This kind of foreground framing, besides aiding dramatically is also effective pictorially in lending depth to the scene.

In the case of a *pan* or *dolly* shot, always plan in advance your separate compositions for each camera *stop*, then plot in the camera movement that will tie these separate compositions together. As for movement within the scene, it is a basic tenet that lines of action leading straight across the screen are less potent dramatically than those originating near one of the corners of the frame and leading into it diagonally. A line of action or static design leading into the pattern from the lower left hand corner of the screen is considered to be the strongest single line of composition.

Similarly, it is undramatic to divide your frame in half either horizontally or vertically by any compositional line (such as a tree or the horizon). By mentally dividing your scene into thirds both ways, and placing your focal point of interest at any of the intersections of these imaginary lines, you will evolve a composition that is much more effective than one that is divided into halves.

Shooting Snow Scenes

In shooting snow exteriors, the primary problem is to cut down the extreme brightness contrast ratio between the white snow and the shadow areas. This problem of reducing harsh contrast also applies to desert and seascapes.

In the case of snow in bright sunlight, the brightness contrast of the scene is tremendous. Add to this the substantial amount of light reflected from the white surface, and you have a good deal of light to contend with.

Various filters and filter combinations have been worked out to soften snow scenes so that they do not "burn up" on the screen. We shall discuss a few of these filters and their effects.

3 N 5 (a combination of Aero 1 and 50% Neutral Density filters) gives a light color correctness to the sky without increasing contrast of the remainder of the scene.

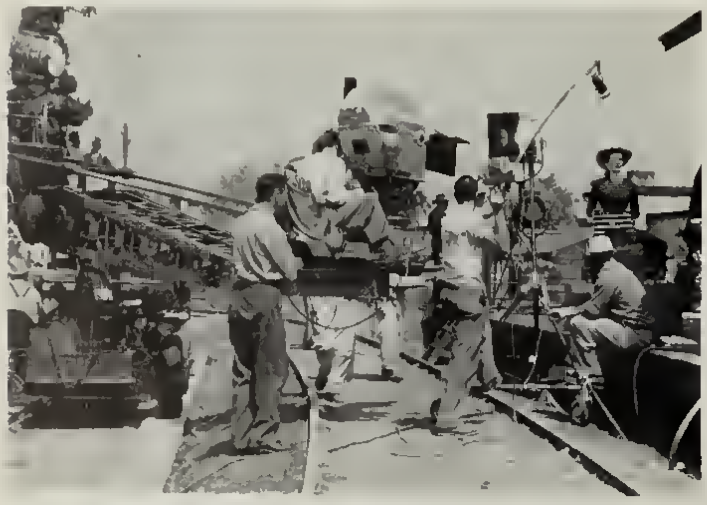
5 N 5 (a combination of Aero 2 and 50% Neutral Density filters)— gives medium sky correction without excessive contrast. It has the same basic action as 3 N 5, but with added detail. It is used to soften strong glare and contrast in snow scenes having heavy shadows.

X2 and 23A filters superimposed. This combination darkens skies and produces a pleasant softness that cuts contrast between snow and shadow.

If any errors must be made in exposing snow scenes, they should preferably be made toward the underexposed side of the scale.

We have discussed the basic problems of exterior shooting. We are now ready to go into detail on the subject of interior lighting.

NEXT ISSUE— PART VII—*Standard Set Lighting.*



TRAVELLING SHOT. Katharine Hepburn takes a walk along railroad station platform for scene in Metro-Goldwyn-Mayer's 'Sea of Grass.' Director of Cinematography Harry Stradling, A.S.C. (standing in left foreground behind camera), closely follows the action. Camera boom on travelling dolly boosts lights and microphone setup typifies this type of shot.

The Cinema Workshop

(For Semi-Professional and Amateur Production)

6. Exterior Shooting

By CHARLES LORING

THE problems encountered in the shooting of an exterior motion picture sequence arise, parodoxically enough, from the rather over-abundant generosity of Nature. That is to say, our main concern in outdoor filming is not so much to secure the basically necessary photographic elements (light, backgrounds, etc.), but to *control* these elements that have been so lavishly placed at our disposal.

In modern professional practice, a substantial amount of exterior sequences are shot inside sound stages because of the firmer control the technician can exercise over the mechanical factors of photography. However, for the semi-professional producer, the outdoors offers an infinite number of perfect photographic backgrounds, a strong and constant source of light, and infinite room in which to stage action and place equipment.

Ways and means of controlling these elements are basic, and once learned, can be followed consistently with good results. Taking for granted that the reader knows these fundamental techniques, we shall discuss some of the finer points of photography necessary to the filming of exterior sequences.

The Basis of Exposure

Granted that there are many factors that influence the overall excellence of exterior cinematography, it can be said with emphasis that the most important single influence on general quality is *correct exposure*. Even with present-day wide-latitude emulsions and modern methods of processing geared to compensate for faulty exposure, the fact remains that a perfect scene results only when the exposure has been calculated "on the nose."

In order to achieve this result, the cameraman must consider, not only the mechanical requirements of his scene, but *the particular kind of processing which will be given his film after exposure*. For this reason, he will be wise to run tests at standard exposures and send them off to the lab for processing in order to find out what is the standard of development for that particular lab. No two laboratories process film in exactly the same way, and the cameraman must make inquiries in order to adjust his exposure techniques (as well as his own evaluation of the film's speed) to the particular lab that is processing his film.

A good many novice cameramen have asked the question: "What do you expose for in the scene?"—and they seem intent upon finding a rule to follow. Obviously, no one rule could possibly cover every situation, but in general we can say that *you expose for the most important element in your scene*. Another rule that is an old standby of cameramen is: *Expose for your shadows and let the highlights take care of themselves*.

Actually, neither of these rules of thumb should be taken too literally—nor do they apply in every case. Your basic problem (within the latitude of the film) is to expose in such a way that the light areas are not *over*exposed and the dark areas are not *under*exposed. This depends partially on careful selection of your film emulsion, but even more so upon your control of the amount of light that reaches the film.

Very often, in using high-speed films you will find that even at the smallest lens opening the scene will be overexposed. In this case, there are two ways of cutting down your exposure. One way is to use *neutral density filters*, flats of optically ground grey glass that absorb all colors in equal relative proportion. The other alternative is to cut down your shutter angle. Most 35mm professional cameras and a few 16mm jobs (such as the Cine Kodak Special and the Bolex) have variable shutters to accomplish this.

Using the Exposure Meter

There is more to using an exposure meter than merely pointing it at the scene to be filmed. Many cameramen do just that, and then wonder why their exposure is so far off.

Firstly, you must decide what elements of the scene you are principally exposing for. When people appear in the composition, obviously you must be mainly concerned with the rendition of skin tones. Therefore, your principal reading should be taken just a few inches from the character's face. Other readings, taken from camera position etc., should be balanced to favor this principal reading.

Secondly, a meter usually "sees" a wider angle than that encompassed by the camera lens. Therefore, it is necessary to take most of your readings from a spot closer in than camera position.

On this same subject, it should be pointed out that skies are especially misleading when you are taking a reading. They are usually overly-bright in relation to the rest of the scene, and will tend to boost your reading higher than it should be for exposing the actual subject. For this reason, it is wise to tilt your meter downward a bit (at about a 30° angle) in order that your reading will cover more foreground and less sky background.

Every cameraman knows how important it is to use a good sunshade over his lens in order to prevent strong light from causing *flare*. The element of an exposure meter is similarly affected when scattered rays of light fall upon its unshaded surface, causing a deceptively bright reading of the scene. Therefore it is wise to shade your meter element either with your hand, or with a home-made cardboard shade in order to achieve a more faithful reading.

The Use of Filters

Filters have three primary purposes: *a. To correct the rendition of certain colors, b. To cut down the amount of light reaching the film*, and *c. To produce special effects*. In any event, filters should not be used just for the sake of using them, but always with a specific purpose in mind.

Firstly, we use filters to *correct* certain color tones, notably to darken skies and water and thus keep them from "burning up" the composition. Yellow and orange filters, used in this way, add a certain richness to exterior sequences and provide a pictorial contrast between flesh tones and the sky. Red filters, overcorrecting blue tones, darken the sky dramatically, but must be used very carefully, as they tend to "wash out" skin tones unless special make-up is used.

The second function, that of *cutting down exposure*, is achieved, as we have pointed out, through the use of neutral density filters. These filters are available in varying densities from 25% to 200%. They also tend to flatten out contrast to a greater or lesser degree depending upon the density of filter used.

The third function of filters, that of producing *special effects*, is used in simulating night effects outdoors in daylight, and in fantasy films for creating weird dream sequences, etc. For night effects, the red filters (23A, 25A, 29F, 70, and 72) are most widely used. For softer night effects in sunlight, a combination of 50B with 23A is quite effective. For the fantasy effects mentioned 25A, 29F, 70, 72, and 88A filters are used with infra red film.

The Use of Reflectors

In outdoor filming, especially in bright sunlight, there is a naturally harsh con-

(Continued on Page 446)

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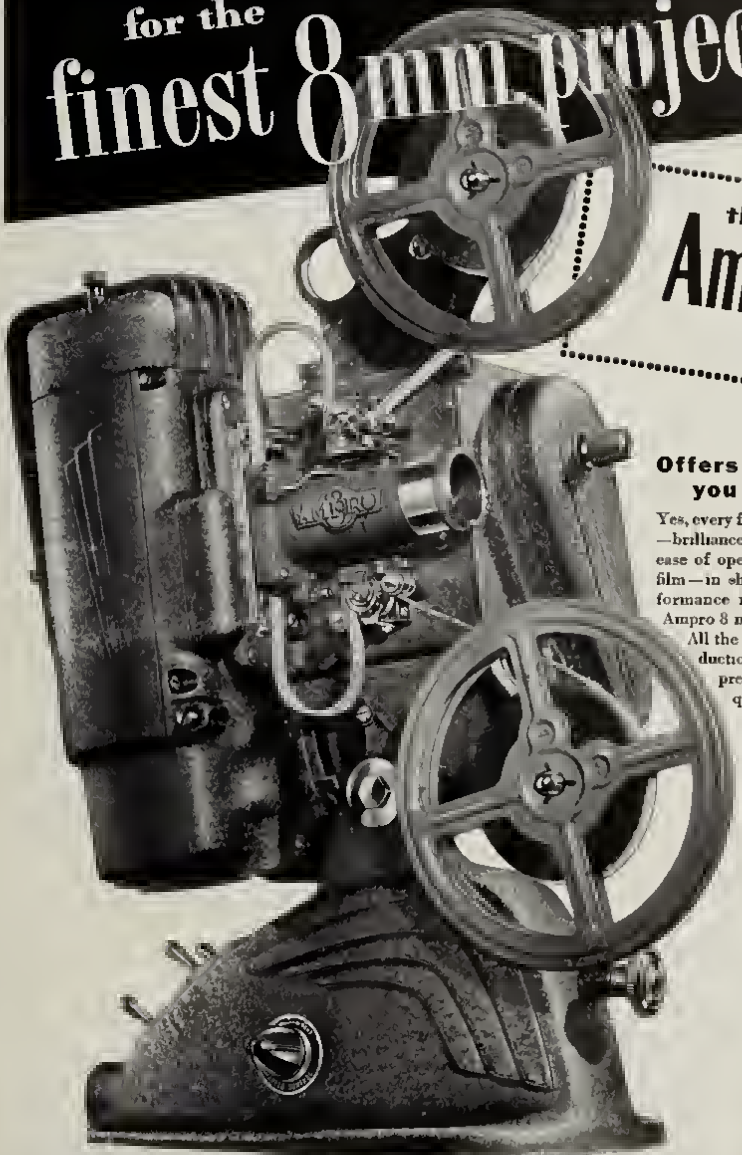

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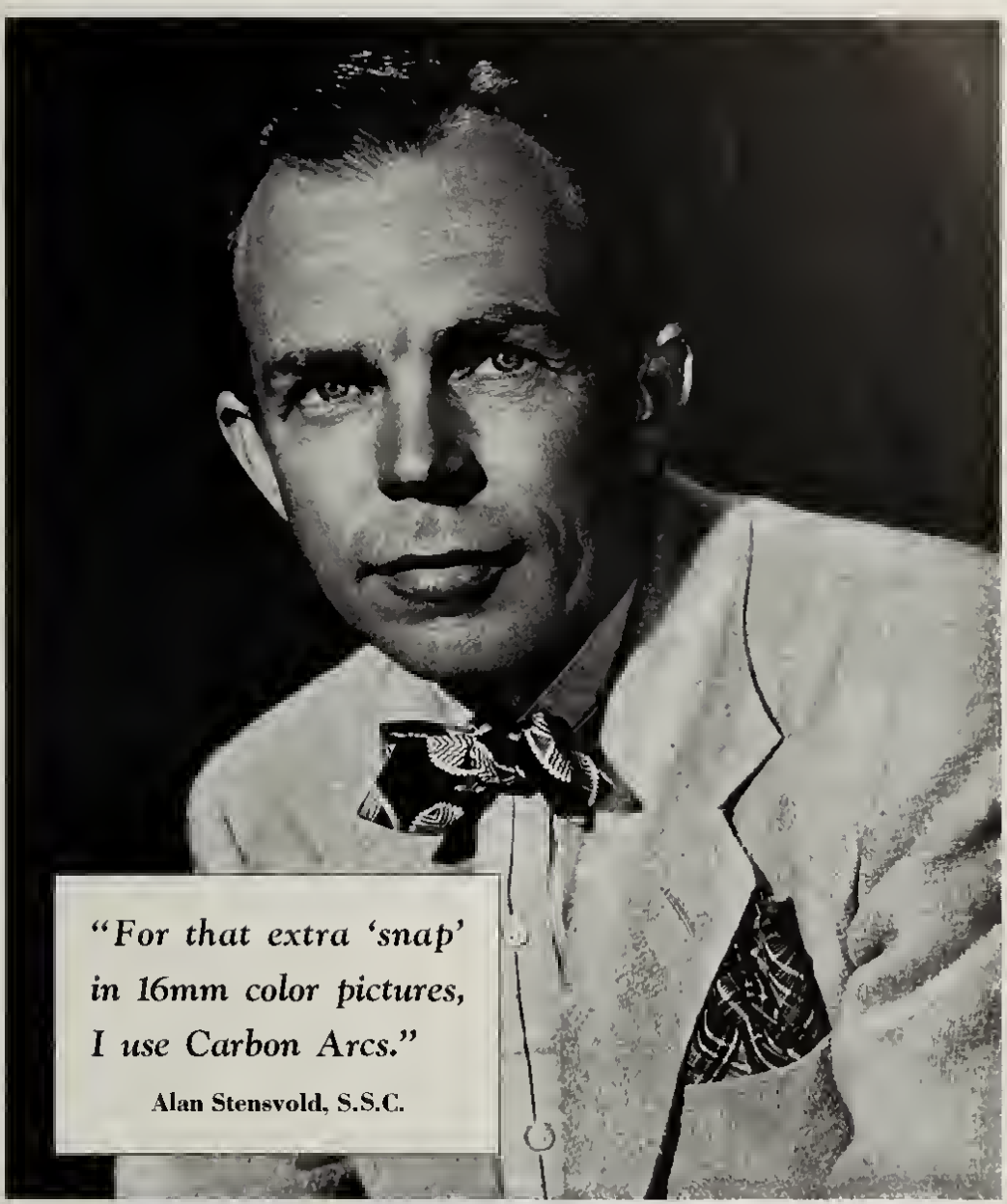

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AMONG THE MOVIE CLUBS

Chicago Cinematographers

Chicago Cinematographers resumed regular monthly dinner meetings on evening of October 1st at Chicago Union Station After a turkey dinner, a 16mm. Anscocolor travelogue, "West On Thirty," by member R. C Snyder, was shown. Al Rus took charge of the meeting as president for the coming year, with Arthur Josephson functioning as vice president, and Earnest M Lundgren as secretary-treasurer New board members elected in June for two year terms include Robert Pennypacker and Jerome S. Franks.

For the November 5th meeting, Art Silha presented his 8mm color subject of 50 minutes, "Just Browsing Around."

Seattle Amateur

Seattle Amateur Movie Club has completed plans for a club production to be made under title of "Let's Make A Movie." With story plans set, Anchor Jensen was voted to function as producer, with Charles Grinnell in charge of photography Aubrey Widson and Ralph Lund will assist the director, while Erwin Miller and Walter Mankowski will function as assistants on the camera Clyde Huntley was selected to handle the starring role in the workshop production, which will be completed in time for the annual Salon Show in February.

Meeting of November 12th featured a repeat showing of "Meshes of the Afternoon," and balance of program consisted of screening of member films for constructive criticism.

Alhambra La Casa

John H. Clay was chairman of the November 18th meeting of La Casa Movie Club of Alhambra, Calif., which was held in YMCA building Continuance of the 1946 vacation pictures by members highlighted the film program in 16mm Clay presented his "Grand Tetons and Yellowstone," Irwin K. Kendall exhibited his films taken in San Diego, and C K. LeFiell showed motion picture results of his trip through Central and South America

St. Louis Amateur

Actual demonstration of use of lights for interior lighting was presented at the November 12th meeting of Amateur Motion Picture Club of St Louis, held in the Roosevelt hotel Lights were set up in different ways, and then films were projected to show the specific results. Film program of the evening included "Hawaii," by Ira Hicks, and F E. Gunnell's 1945 Award winner, "While the Earth Remaineth"

New York Metropolitan

An extensive film program entertained members of Metropolitan Motion Picture Club of New York City at November 21st meeting held in hotel Pennsylvania Pictures comprised: "New Song of the Mesa," by Edmund Shaw; "Song of the Open Road" by Charles H Benjamin; "El Rancho," by Mrs Mary Jessop; "Spring Is Here," by Harry Groedel; and "Pointless Foray," by George Mesaros. All presentations were in 16mm kodachrome

Titling and various ways to make same, was the subject of supplemental meeting held on November 6th Metropolitan announces that its December 19th meeting has been set aside for the club's annual Christmas party—a big event for members—at which a fine program of films will be shown

Los Angeles Cinema

Mrs E B Kellam featured the November 4th meeting of the Los Angeles Cinema Club with her presentation of her personally-made films of a South American tour covering period of three months Charles J. Naroma showed the best slides selected by the Hollywood Color Slide group; and Dr Irwin A Moon presented his "God of Creation," a splendid combination of animation and unusual photography for a trip into the astronomical universe.

Annual meeting of Los Angeles Cinema has been set for December 9th, and entries for the annual contest closed on November 21st. Judges for the event include Ted Phillips, S S.C., Edwin Schallert, Herbert E Farmer, Karl Freund, A.S C., Lorenzo Del Riccio, and James H. Mitchell.

San Francisco Cinema

Program chairman Larry Dugan presented two fine films at the November 19th meeting of Cinema Club of San Francisco, held at the Women's City Club; where usual club dinner preceded the session. Films shown were "Rhumba," comedy in 8mm. kodachrome by Mr. and Mrs R E. Haney, and Leon Gagne's "North Coast Highways," 16mm kodachrome travelogue taken on trip from San Francisco to Fort Bragg. Annual dinner meeting will be held on December 17th, according to club announcement

Philadelphia Cinema

November meeting of Philadelphia Cinema Club was held on the 12th in the Little Theatre of Franklin Institute Mr. F. Carroll Beyer of Ansco presented a demonstration of Anscocolor, including discussion of proper exposure and home processing of the film

Los Angeles Night

J. A Hornaday was elected president of the Los Angeles Eight MM. Club at annual meeting held in Bell & Howell auditorium, November 12th Other officers to function during the coming year include: Bion B. Vogel, vice-president; Harold E. McEvers, secretary; and Robert C. Beazell, treasurer. Film program for the evening included: "Christmas at Home," by Merle and Leslie Wilhams, a recent national award winner; and "America the Beautiful," 16mm. kodachrome produced by Warner Brothers for the U S. Treasury Department

Annual banquet and showings of contest films will be held at Scully's Cafe on evening of December 7th

San Francisco Westwood

Regular meeting of Westwood Movie Club of San Francisco was held at St. Francis Community Hall on October 25th, with member Walter C. Clifford presenting his 16mm. color film, "Travelogue of Feather River to Grass Valley." Also shown was "Amateurama," 16mm color comedy produced by Indianapolis Amateur Movie Club

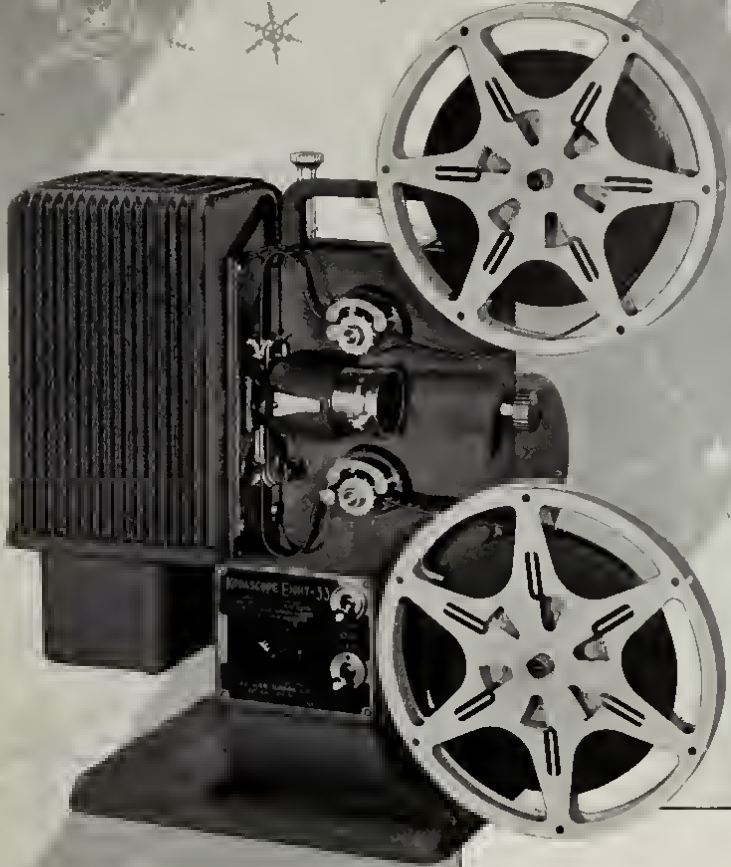
Entries in the club's annual contest for both 16mm. and 8mm. subjects provided highlights of the meeting held on November 29th. Winners will be announced in the next issue

Milwaukee Amateur

Annual film exhibitions for contest prizes were held at the November 13th and 27th meetings of Amateur Movie Society of Milwaukee; with the 8mm. entries judged on the former date, and the 16s holding the screen on the 27th Judges were Charles C Kruse and Carl F. Forbes; with Al Walker functioning as contest chairman Annual election will be held on January 8th, and nominating committee consisting of Naomi Gauger, William Rheingans, and Walter Chappelle is currently engaged in selecting two candidates for each office.

Utah Cine Club

Demonstration of a movie projector capable of showing both 8 and 16mm. prints, was demonstrated by B. Martin Storm at the November 20th meeting of Utah Cine Arts Club of Salt Lake City. Film program included "A Hike Up Bell Canyon," by L. C. Layton, Leo Heffernan's "Hail British Columbia," 1941 Hiram Percy Maxim Award winner loaned by ACL; and showings of unfinished pictures or clips—maxium of 50 feet of 8mm and 100 feet of 16mm.—provided by members. Club bulletin announces that members LeRoy Hansen and Al Londema were award winners in a recent national movie contest.



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Pioneer Still Devising Aerial Movie Short-Cuts

In this 1927 photo, veteran aerial cinematographer Elmer Dyer, A.S.C., is shown with the dual camera setup he used in filming air sequences for Howard Hughes' "Hell's Angels." Two Bell & Howell professional 35mm cameras were employed—one with short focus lens for long shots, the other with telephoto lens for closeups.

Dyer is shown above with his specially rigged Bell & Howell 35mm professional camera during recent shooting of aerial sequences for Columbia Pictures' "Gallant Journey." Notice the 1,000-foot magazine used in the open cockpit for the first time by Dyer.

There are good reasons for the authentic excitement packed into aerial photographic sequences in Columbia Pictures' recent release "Gallant Journey." Among the most important are Cameraman Elmer Dyer, A.S.C., and his custom-rigged Bell & Howell 35mm. Professional camera. In filming some of the action in this feature, Dyer made aerial photographic history by successfully using a 1000-ft. film magazine in an open cockpit for the first time. Special steel bracing was required for this adaptation, which permitted unusually long shooting sessions with a single loading of film.

A major in the Army Air Forces during the war, Dyer saw service in Europe with the 8th Air Force, and also had a hand in training several hundred Army aerial photographers in California.

With some 10,000 flying hours in his log-book, Dyer is a pioneer in open-cockpit movie technique. He is remembered in the industry for his daring work in filming "Hell's Angels" for Howard Hughes in 1927. At that time he had two Bell & Howell Professional cameras mounted in tandem in a biplane, one fitted with a short-focus lens for long shots, the other equipped with a telephoto for simulated closeups. This arrangement permitted the completion of two scenes during a single flight.

Currently, Dyer is employing a similar tandem setup, consisting of an Eyemo 35mm. and a Filmo 70-F 16mm. camera, in filming a series of short subjects entitled "American Air Trails." The dual camera mounting enables him to shoot 35mm. black-and-white and 16mm. color footage simultaneously.

W. G. C. BOSCO

Contributors Honored

"March of Progress," written and directed by W. G. C. Bosco, whose Aces of the Camera is a popular feature of this magazine, and photographed by Robert Pittack, A.S.C., has been selected by the Motion Picture Division of the Library of Congress as one of the best pictures in its class produced in 1945.

Prints of this black-and-white subject, which has as its theme the influence of transportation on the changing pattern of life in the San Francisco Bay area, will be preserved in the permanent collection of the Library.

Lightman's Article in Collier's

Herb Lightman, whose critical and information on the use of subjective photographic techniques are regular features of American Cinematographer, had by-line article, "Movie Revolution" published in November 9th issue of Collier's. This gave the public some inside information on the use of subjective camera technique by Robert Montgomery and Director of Photography Paul Vogel, A.S.C. for M-G-M's "Lady in the Lake."

South African Agency

Eric Horvitch of Photo Agencies of Southern Africa, has acquired exclusive distribution for the Professional Junior tripods of Camera Equipment Company for Union of South Africa and surrounding territories.

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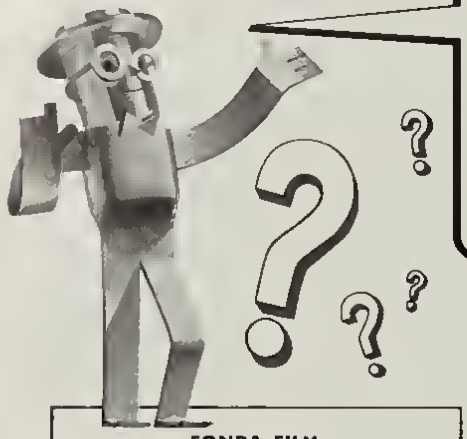

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pronto But it took us the rest of the afternoon to get the natives down from the rafters and the top of the sets.

"We certainly have a cinch now with optical printers and other facilities on production But in those days, you cranked the picture by hand, making all fades, overlaps and double exposures right in the camera

"In one serial scene, we wanted a herd of tigers to run to the far side of a stockade where the natives were throwing a man in as a sacrifice We only had eight tigers, so we made three exposures below to produce total of 24 tigers But they all had to run on count to reach the designated spot simultaneously, and we finally accomplished the desired shot In the same manner, we tripled the 40 native extras to a mob of 120

Earliest Experiments in Soundfilms

"In 1925, Jack Warner sent me to New York to do the initial experimenting on sound motion pictures with engineers of Bell Laboratories, and I worked with Stanley S. Watkins and his associates from the Laboratories They worked on the recording end, while I handled the photography for the tests Of course, at that time, everything was recorded on wax. When you once started on a record there was no such thing as stopping; you had to make the entire 10 minute record on one wax

"At first, the motors of camera and sound were not synchronized as they are today; each had a throboscope disc on the shaft and the camera assistant and assistant recorder had to watch the disc all through the take, and if it started to hunt forward or back, one or the other would have to push the handle of a rheostat backward or forward in order to bring the motors back together again Of course, they would never be exactly together all of the time, but in those days you could be out a little and the audience would not complain

"When I first started, we only used one camera Everything was a long shot So one day I suggested to Stanley Watkins that—as we were synchronizing one camera with the recorder—why not hook up two so that the sound camera could get a close or medium shot. The tryout was satisfactory, and that was the beginning of multiple cameras on the set.

"Then we shortly were using three cameras on everything; one for the long, or master, shot; one for medium shot; and the other with long focal lenses for closeups. As a rule, I used to have the camera with the long 3-4-5-6 inch lenses. On occasions I would change lenses as many as 15 or 20 times in order to get different closeup and medium shots in a 10 minute number Of course, every time I changed from one lens to another, a few frames of the picture would be lost, but as the long shot camera was going all the time, we could always cut back to it and keep everything in synk

Initial Sweet Boxes

"The expression of 'sweating it out' must have originated back in the old Manhattan Opera House, New York When a number was started, the cameraman and his assistant were locked up in a sound proof box which was termed the camera booth We stayed in there for 10 minute stretches with no fresh air except what was there when the door was closed, and that was soon used up I often wonder what could have happened if a fire started. The door was locked from the outside, which necessitated someone opening it up at the finish of every take

First WB Sound Pictures Shown

August 6, 1926 was the big night, the first showing of Warner Brothers' sound picture. It was a white tie and tail affair, with all the Warner brothers there, but I think the happiest was the late Sam Warner, because the entire project was his particular pet and he had worked all through it with us In fact, the company had taken one of the greatest gambles of all time in motion picture history—but it paid off handsomely It was an eventful night. We had made a number of shorts to supplement the orchestra - backgrounded

'Don Juan,' so the shorts had to do the talking and singing. There was an opening speech by Will Hays, Martinelli in an operatic selection, Ray Smeck and his banjo, Anna Case, and the Cansinos in a Spanish Fiesta reel.

"We made shorts for about another year in New York and then closed down, at which time I transferred back to Hollywood where Warners equipped a small stage for sound production and started to make shorts again. We had had so much trouble with arc lights in New York on account of the noise, that we decided to attempt the use of all incandescent—or inkie—light. With maximum of 1,000 watt lamps to work with, we used all we could get, but had nothing for spot lights. Frank Murphy constructed some stands with mirror reflectors for the 1,000 watters, and then took all the flood light spots that were being used to light up the front of the studio for improvised spots. That was the start of inkie lights for picture production.

"After we got a few lights together, the studio held regular classes in inkie light on a special set, with all studio motion picture photographers invited. The different cameramen would take turns lighting the set, and the film would be run off at the next meeting.

"At the time, we made some sound sequences in full length pictures such as 'The Jazz Singer,' 'Lion and the Mouse,' 'Singing Fool,' 'The Barker,' and others. Shortly after, a short with Cullen Landis, Helene Costello, and Gene Pallette was produced by Bryan Foy. It looked so good, he decided to expand it into a two reeler but sequences kept adding until he wound up with the first all-talker, 'Lights of New York,' to again make motion picture history.

Coast to Coast

Early in 1928, production was resumed in the New York studios, so I was shipped east for a seven year stretch, until returning to the coast in 1935 to associate with the special effects department. Last spring, while in New York making some background keys for 'The Voice of the Turtle,' I again met Stanley Watkins. During our reminiscences, he remembered that he had stored the original shorts tests in a cabinet on top of the Bell Telephone building. So we went up and easily found them where they had originally been stored. The amazing part of it was that they went through the projector after all these years—had not shrunk and were not brittle. But the showing brought back happy memories—of nearly 30 years with one company and the numerous new practices which had to be devised in motion picture photography, special effects and process, and soundfilm procedure to maintain motion pictures as the greatest form of entertainment."

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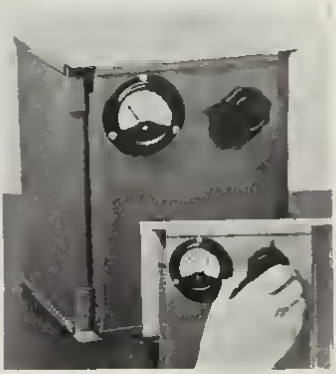

The Victor Animatograph Corporation of Davenport, Iowa, is offering a new Voltage Regulator with which the power supply for 16mm projectors can be held to the correct, and uniform, level.

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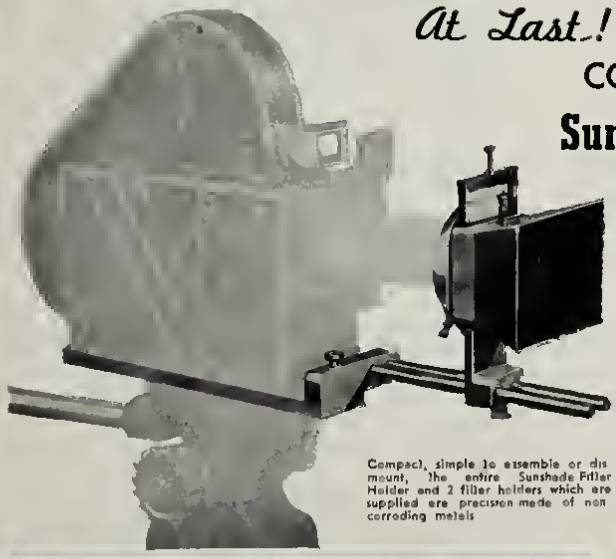

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"The Killers"

(Continued from Page 431)

static camera and let our players work toward it."

Siodmak is a director who likes to convey visual ideas in a unique way. He worked closely with Woody Bredell, A.S.C., striving to inject psychological undertones into certain key sequences of the film. There is one scene, for instance, in which we see a group of gangsters plotting a hold-up. Here the key light was placed unusually high, with no *fill* illumination, so that the players' eyes went dark in such a way that the shadows suggested masks.

For another sequence in which the hero is shown in a prison cell, the lighting was purposely soft and church-like to accentuate the innocence of the character. In a series of scenes that took place in the morgue, the players were silhouetted against a glaring white wall, the striking illumination of which conveyed a kind of "butcher shop" atmosphere.

Perhaps the most unusual bit of camera handling in the whole picture is the hold-up sequence, filmed entirely in one take, utilizing 18 *camera stops* and upwards of 60 changes of focus. The newsreel quality of the camera approach, plus the realistic confusion of the factory policemen portrayed, gave this sequence a documentary quality.

A Cameraman's Picture

For cinematographer Bredell, "The Killers" was, at the same time, a field day and a challenge. He wanted his treatment to be dramatic, yet so realistic that it would go unnoticed as a mechanical device. For this reason, he ruled out anything that smacked of *beautiful* photography and worked entirely for realistic effects.

Especially *apropo* was his lighting treatment, a style which he calls *out-of-balance* lighting, which is characteristic by sharp contrast between crystal white and velvet black. Purposely discarding fill illumination he managed to avoid wishy-washy grey halftones.

"The lighting set-ups were kept quite simple," Bredell points out. "It is a temptation for a cameraman to become spoiled because he is given too much equipment with which to work, and he feels that he must use all of it. Similarly, if you have 18 electricians on a set, each one wants to turn his light on."

Naturally, the kind of realistic lighting used was not especially flattering to the players. There were no ethereally diffused close-ups, no softly lit glamour shots. Instead, eye shadows were allowed to go dark, and side-lighting divided faces into black and white halves. There was a bit of vain grumbling in the projection room when the first *dailies* were shown. "The audience can't see my eyes there," one actor was heard to remark. "One side of my face is dark," wailed an ingenue.

But the technicians continued to sacrifice the vanity of the actors in favor of the realistic, down-to-earth treatment that made the audience feel that they were watching the actions of real people. Those actors who could take that kind of lighting took it—and the rest went along for the ride. Soon, however, the players fell in with the enthusiastic mood of the technicians and forgot all about their photographic complaints.

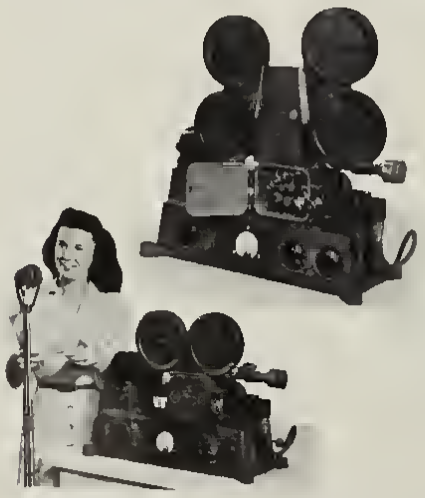
"We had no elaborate sets with which to achieve unusual effects," Bredell observes. "Therefore, we had to get our interesting visual patterns with light and shadow. We tried to use *story* photography rather than stereotyped motion picture or stat photography. I hope that not too many people specifically noticed the photography in 'The Killers,' because motion picture camerawork is only good when it goes unnoticed."

The Team Pulls Together

Work on the film went along in an in-

(Continued on Page 463)

NEW ELECTRONE-TONE 16mm. RECORDER and PRINTER WITH TONE-FIDELITY THAT EXCELS



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Printing is accomplished by exchanging the recording film magazine with a double-spool magazine and passing the original and unexposed film in contact with each other through the recording head, using the recording exciter as a source of light. No film is lost in the Electrone-Tone Daylite Printer—every foot is utilized.

The equipment is converted into a Play-Back unit by introducing a photo-electric cell into the circuit and utilizing the recording exciter as a fixed source of light.

All Electrone-Tone equipment described or illustrated herein is fully covered by issued patents or patent applications pending.

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Universal Acquires Filmo Sound

THE entire 8 and 16 mm film library of Bell & Howell was acquired early last month by United World Films, Inc., wholly-owned subsidiary of Universal Pictures Company, Inc., recently formed to produce and distribute sub-standard entertainment, educational and religious films on a world-wide basis.

Purchase of the B&H Filmosound library of 6,000 subjects, and acquisition of the branch offices and operating personnel in the Chicago, New York, Washington and Los Angeles exchanges, is of major importance to the 8 and 16 mm. sectors of the industry, as it marks the initial entry of a major film company into the field on a large scale.

United World will continue to distribute current subjects in the Filmosound library; and in addition will handle the 16 mm. prints of forthcoming Universal-International entertainment productions, and educational and religious releases which the J. Arthur Rank interests will produce in England. Other entertainment and educational reels will be acquired for the widened distribution which is certain to eventuate with operation by United World and Universal.

Filmosound library was originally established by Bell & Howell in 1929 to aid in the development of the 8 and 16 mm. divisions, and to provide a central point where such films could be booked. Having accomplished the original purpose, and deciding that plans of United World will assure wider expansion of distribution, B&H made the deal to confine company activities to the design and manufacture of precision motion picture equipment.

Matthew Fox, executive president of Universal, will function as board chairman of United World; with Colonel James M. Franey as president. William F. Kruse, with Filmosound since its inception and manager since 1933; Edward L. McEvoy, head of Universal's shorts subject department; and Edmund L. Dorfman, will be active vice presidents of the new organization.

Undoubtedly, initial moves of United World will be to organize and expand distribution of the film library, with indications that eventually bookings will be possible through the regular film exchanges of Universal-International in the United States and abroad. In addition, special educational and religious films in the 16 mm. size will be produced for distribution through United World.

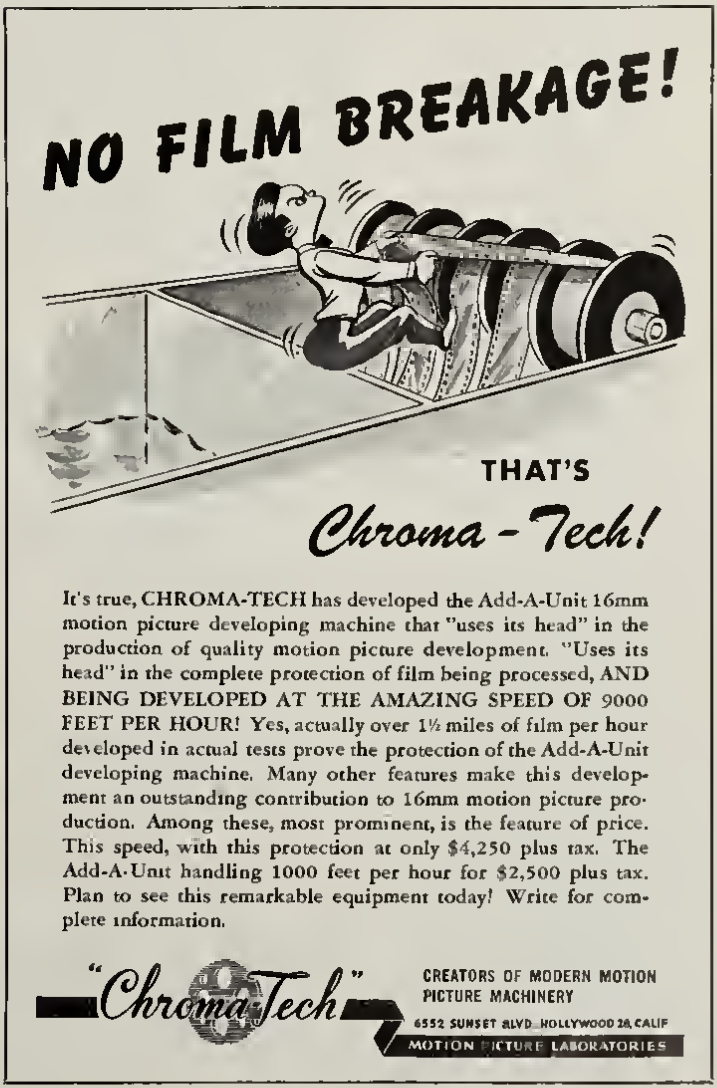
The following statement was issued by N. J. Blumberg, President of Universal Pictures Company, Inc., and J. H. McNabb, President of Bell and Howell Company:

"The marked increase in the 16 mm. and 8 mm. market, stimulated by the ever growing desire on the part of the public to acquire information through motion pictures, inspired the transaction whereby Universal acquires the Bell and Howell library of 16 mm. and 8 mm. films. Bell and Howell felt that Universal had conceived a real public service program in relation to the distribution of this type film and for that reason finally selected Universal from a large list of other interests in the motion picture field.

"The affiliation which Universal enjoys, world-wide, with the J. Arthur Rank organization also was an important factor in the consummation of the deal.

"Although details of working plans are not final, each week will see developments which will rapidly bring out not only the complete organization for the distribution of the films, but production as well."

Officials of both companies emphasized the impetus gained in the 16 mm. and 8 mm. domain through the use of small range film by the Armed Services during the war is greatly responsible for an overnight interest on the part of the public in viewing 16 mm. films which contain subject matter that cannot be seen under any other conditions.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GENERAL ELECTRIC

Current Assignments of A. S. C. Members

As this issue of American Cinematographer goes to press, members of the A. S. C. were engaged as Directors of Photography in the Hollywood studios as follows:

Columbia

Charles Lawton, Jr., "The Lady from Shanghai," with Rita Hayworth, Orson Welles, Glenn Anders.

William Snyder, "The Swordsman," (Technicolor), with Larry Parks, Ellen Drew, George Macready, Edgar Buchanan.

George Meehan, Jr., "King of the Wild Horses," with Preston Foster, Gail Patrick, Guinn Williams.

Vincent Farrar, "Blondie's Holiday," with Arthur Lake, Penny Singleton, Larry Simms.

Eagle-Lion

L. W. O'Connell, "Amy Comes Across," with Franchot Tone, Ann Richards, Tom Conway.

Enterprise

Victor Milner, "The Other Love," with Barbara Stanwyck, David Niven, Richard Conte.

Metro-Goldwyn-Mayer

Hal Rosson, "To Kiss and Keep," with Gene Kelly, Marie McDonald, Charles Winninger, Spring Byington.

Sidney Wagner, "The Romance of Rosy Ridge," with Van Johnson, Thomas Mitchell, Marshall Thompson, Selena Royle, Guy Kibbe.

George Folsey, "Green Dolphin Street," with Lana Turner, Van Heflin, Donna Reed, Edmund Gwenn, Reginald Owen.

Charles Rosher, "Cynthia's Secret," with Lionel Barrymore, Edward Arnold, Lucile Bremer, James Craig, Keye Luke.

Charles Salerno, "Undercover Maisie," with Ann Sothern, Barry Nelson, Mark Daniels.

Harry Stradling, "A Love Story," with Katharine Hepburn, Paul Henreid, Robert Walker.

Ray June, "The Birds and the Bees," with Jeanette MacDonald, Jose Iturbi, Jane Powell, Kathryn Card.

Robert Surtees, "The Rich, Full Life," with Elizabeth Taylor, George Murphy, Mary Astor, Spring Byington, Gene Lockhart.

Monogram

Henry Sharp, "The Guilty," with Bonita Granville, Don Castle, Regis Toomey, John Litel.

Mack Stengler, "Fall Guy," Robert Penn, Teala Loring, Robert Armstrong.

Marcel LePicard, "Drifting Through," with Jimmy Wakely, Lee Shite, Kay Morley.

Paramount

Lionel Lindon, "Variety Girl," with Mary Hatcher, Olga San Juan, DeForest Kelley, and Paramount stars.

William Mellor, "Blaze of Noon," with Anne Baxter, William Holden, Sterling

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PRC

Virgil Miller, "Red Stallion," with Robert Paige, Noreen Nash, Jan Darwell.

RKO

Sol Polito, "The Long Night," (Hakim-Litvak Prod.) with Henry Fonda, Barbara Bel Geddes, Vincent Price, Ann Dvorak.

Archie Stout, "Tarzan and the Huntress," (Sol Lesser Prod.) with Johnny Weissmuller, Brenda Joyce, Johnny Sheffield, Patricia Morison.

Nick Musuraca, "Build My Gallows High," with Robert Mitchum, Jane Greer, Virginia Huston.

Jack McKenzie, "Seven Keys to Baldpate," with Philip Terry, Jacqueline White, Eduardo Ciannelli, Margaret Lindsay.

Republic

Tony Gaudio, "Gallant Man," with Don Ameche, Catherine McLeod, Roscoe Karns, Joe Frisco.

John Alton, "Wyoming," with William Elliott, Vera Ralston, John Carroll, Virginia Grey, George (Gabby Hayes), Albert Dekker, Maria Ouspenskaya.

Screen Guild

Robert Pittack, "Bells of San Fernando," (Hillcrest Prod.) with Donald Woods, Gloria Warren, Shirley O'Hara.

Twentieth Century-Fox

Leon Shamroy, "Forever Amber," (Technicolor), with Linda Darnell, Cornell Wilde, Richard Greene, Glenn Langan, George Sanders, Margot Grahame.

Harry Jackson, "Mother Wore Tights," (Technicolor), with Betty Grable, Dan Dailey, Jr., Mona Freeman, Anabel Shaw Connie Marshall, Michael Dunne, William Frawley.

Benjamin Kline, "Jewels of Brandenburg," (Sol Wurtzel Prod.), with Richard Travis, Micheline Cheirel, Leonard Strong.

United Artists

Russell Harlan, "Red River," (Monterey Prod.) with John Wayne, Montgomery Clift, Walter Brennan, John Ireland, Joanne Dru, Noah Beery, Jr.

William Daniels, "Personal Column," (Hunt Stromberg Prod.) with George Sanders, Lucille Ball, Charles Coburn, Cedric Hardwicke.

Universal-International

Milton Krasner, "The Egg and I," with Claudette Colbert, Fred MacMurray, Marjorie Main, Louise Allbritton, Percy Kilbride.

Charles Van Enger, "Buck Privates Come Home," with Bud Abbott, Lou Costello, Tom Brown, Nat Pendleton, Beverly Simmons.

Warners

Peverell Marley, "Night Unto Night," with Viveca Lindfors, Ronald Reagan, Osa Massen, Broderick Crawford.

Arthur Edeson and William Skall, "My Wild Irish Rose," (Technicolor), with Dennis Morgan, Andrea King, Arlene Dahl, Alan Hale, George Tobias, George O'Brien.

Carl Guthrie, "The Woman in White," with Alexis Smith, Eleanor Parker, Sydney Greenstreet, Agnes Moorehead, John Emery, Emma Dunn.

Ted McCord, "Deep Valley," with Ida Lupino, Dane Clark, Wayne Morris, Fay Bainter, Henry Hull.

Sid Hickox, "Dark Passage," with Humphrey Bogart, Lauren Bacall, Agnes Moorehead, Bruce Bennett, Tom d'Andrea.

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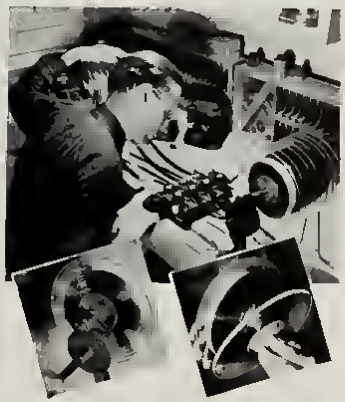

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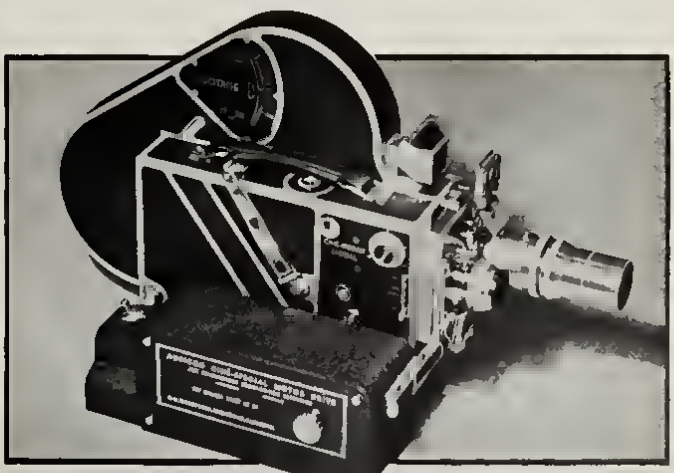

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Camera and Tripod

(Continued from Page 441)

order and came through beautifully on the screen

What Staub considers the most difficult job he ever tackled alone was filmed one afternoon years ago at Pickfair with the late Douglas Fairbanks and Mary Pickford

"It was only Doug's terrific sense of humor that prompted him to agree to do the reel in the first place," Staub recalls "It was made in connection with Fairbanks' appearance at the premiere of one of his new pictures

"The action was something like this," Staub said "Miss Pickford, dressed in a formal evening gown, comes out into the garden calling her husband to go to the theater She finds him all dressed in white tie, tails and top hat, happily splashing around in the swimming pool When Doug hears Mary's call he calmly walks out of the pool and emerges with his clothes completely dry, ready to leave for the premiere

"To film that trick sequence, I had to cover the lens and run off about 50-ft of unexposed film Then I reversed the belt on the camera and photographed Doug as he walked backward into the center of the pool After this was done, I again covered the lens and ran the 50-ft of exposed film back through the camera again before continuing with the sequence The closeups of Doug at the edge of the pool brushing himself dry had been made even earlier Back at the laboratory after development all this footage was intercut with normal footage showing Fairbanks' arrival at the theater to produce a good, solid laugh for the audience

"To film that same trick sequence today," Staub estimates, "he would use a crew of at least 18 technical men and assistants But," he feels, "the incident does illustrate the complicated type of scene one man can film when the occasion demands it"

Staub admits he gets nostalgic satisfaction in being the only man in Hollywood who holds cards in the American Society of Cinematographers, the International Photographers and the Screen Directors' Guild And the fact that his days as a one-man operator are over is compensated by the luxury of being able to draw upon a full crew whenever he goes out to shoot a new "Screen Snapshot reel" for Columbia

His present production crew measures up something like this: Camera crew 4 men, grips 2, electricians 2, sound crew 5, drivers 4, assistant director 1, makeup 1, hairdress 1, total crew, 20

By contrast, when he did the whole job himself, he was his own writer, director, producer cameraman special effects man, electrician and property man Furthermore, he cut, edited and titled those old reels and took them on the road to sell on a states-right basis to theaters and chains throughout the country

As he remembers it, he got $350 00 per reel (his cost) for the foreign right on such subjects. All the domestic revenue was velvet In his first year as a lone-hand cameraman-producer, when he was twenty-four years old, his net earnings were slightly over $11,000

During the intervening years Staub has made, in addition to the 614 one- and two-reel shorts, about a dozen feature pictures at Republic which ranged in theme from musicals and comedies to straight dramas and rip-roaring westerns

Since his return to Columbia to resume making "Screen Snapshots," Staub has boosted the release on these shorts from 60 release prints to 120 prints per subject. On such specials as "Famous Movie Fathers," more than 125 release prints were required One subject titled "Thrills in Spills," presenting a lot of daire-devil by the screen's best stunt men, had an all time high of 150 release prints

The fact that his "Screen Snapshots" reels have three times been nominated for Academy Awards, and that they play regularly in over 5,000 theaters in the United States alone, is something to bring a sparkle of satisfaction into Staub's eyes when he remembers some of the headaches of his early days.

Asked how long his contract still has to run with Columbia, Staub merely grinned

"I don't have any contract," he said "I don't need it Every Christmas I just go up and shake hands with the president of the company, Harry Cohn Then I'm all set for another year's work'"

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"The Killers"

(Continued from Page 458)

credibly smooth manner From time to time, of course, there were minor disagreements, such as occurred during the filming of the morgue sequence. The producer felt that it might be just a bit extreme to play the actors silhouetted against a glaring white background But he was overruled by both the director and the cinematographer, so the scene stayed in

When the picture was finished, the technicians all felt that they had a great piece of celluloid there, but the final opinion rested with the public, since a picture with no stars is usually hard to sell at the box office. Wanting to make it as difficult as possible for himself, Hellinger took the picture first to an easy audience for preview, then to the most skeptical audience he could find He called in members of the underworld to view the picture and give their opinions as "technical advisers" When these characters waxed even more enthusiastic than average spectators, he began to feel that the film might score.

Later, he flew a print up to author Ernest Hemingway at his mountain retreat near Sun Valley, Idaho Hemingway invited the whole town of 60 hardy souls to see the picture, then sent a glowing telegram to Hellinger praising "The Killers" as "the best screen adaptation ever made of any of my work"

Looking back at the hectic months during which the film was in production, Mark Hellinger observes, "We had a rare association of creative personalities there—with everyone working together for the good of the picture. Working on this film, we all found that it takes unselfish cooperation to bring out the best in the individual specialist."

Asked what was his formula for cinematic success, Hellinger laughted: "Success? Well—in the movies it's about 50% luck and 50% teamwork from the kind of crew we had working on 'The Killers.' What can the producer do to make the picture a success? Well—I'd say he should hire the best possible talent, and then spend six months in Florida while the picture is shooting."

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Ampro "Century-10" 16mm. Sound Projector

Making projection of 16mm. sound-on-film movies as inexpensive as possible, while retaining all the precision features necessary for quality sound projection, is the announced purpose of the new Amprosound "Century-10."

It is presented by Ampro Corporation as a light and compact projector, with extremely simplified design to provide the utmost in 16mm. sound-on-film projection where features such as still pictures, reverse operation, and the combination of silent and sound speeds are not desired. With its constant speed AC motor with film speed of 24 frames per second (sound speed), the Amprosound "Century-10" is adapted for use in homes, classrooms, in small auditoriums and for industry.

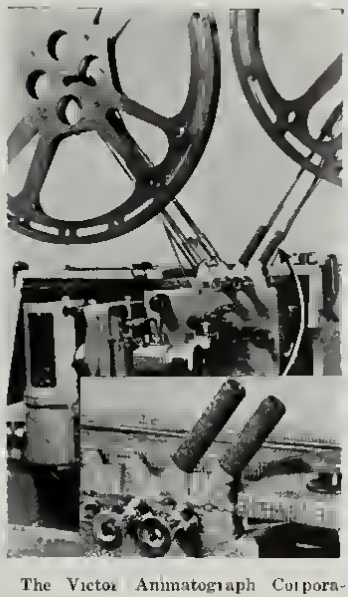
In every way this model demonstrates Ampro's efforts to make operation as easy as possible. Fast automatic rewind, easy threading system, quick-centering tilting knob, and centralized panel control are a few of the convenient features.

You use standard prefocused lamps for this projector, up to and including 1000 watts. Lamp adjustment is micrometric—aligns lamp filament with optical system both laterally and vertically. Projector is equipped with super 2-inch F1.6 coated lens, instantly replaceable by either 1, 1½, 2½, 3, 3½, 4-inch super lenses.

Among the features that make for fine sound reproduction is the rotating type of sound drum, which avoids sliding action between the drum and film—thus prolonging film life and maintaining high quality sound. Curved film-guides before and after sound drum eliminate weaving and "belt action." Amplification is of high quality, with tone control for sharp speech reproduction. Twelve-inch permanent magnet dynamic speaker has adequate power for moderate sized auditoriums.

Amprosound "Century-10" operates on 60 cycles AC only, 105 to 125 volts, although it can be used with a converter or inverter on DC. Complete unit includes projector, speaker, lens, lamps, 1600 ft. reel, and standard accessories. Two carrying cases are also supplied, for projector and speaker.

Reel Arm Extensions for 60-Minute Show



The Victor Animatograph Corporation of Davenport, Iowa, has announced the development of new reel arm extensions which make it possible to employ 2,000-foot reels on its 16mm sound motion picture projector.

The extensions are easily installed in the front arm socket and may be carried in projector or speaker case when not in use. Victor's exclusive top mounting of both reels eliminates the common problems and hazards of front or rear mounting. The new reel arm extensions sell for 75c per set.

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William J German, who has held the post of executive vice president of J. E Brulatour, Inc., for the past 25 years, has been elected president of the company to succeed the late Jules E Brulatour German assumes the presidency of both J. E. Brulatour, Inc (Delaware), and J. E. Brulatour, Inc (California), which handle exclusive American distribution of Eastman Kodak motion picture film products

Mr German, long identified with the organization, is widely known in the film industry nationally

PSA Bestows Awards

Photographic Society of America conferred highest American photographic awards at its annual banquet, held at Rochester on November 2nd, to 39 Americans and eight residents of other countries. Honors included one Honorary Fellowship—to Dr. Samuel Edward Sheppard of Rochester for scientific research in broad fields of photography since 1906—two Honorary Memberships, 10 Fellowships, and 34 Associateships.

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Studio Slang Creates Trade Name

Thousands of professional and amateur photographers, who are owners of the small spotlight known under the trade name of The Dinky Inkie, have inquired as to the origin of this unique name.

In the motion picture studios, all incandescent lights are called "inkies." The Hollywood camera men use many of these spots for controlled light, and when they were merely called spotlights as at their first introduction to the trade, it became the practice of photographers and electricians to refer to them as "those dinky inkies," to distinguish them from the larger spotlights

The manufacturers decided that the best way to describe the product in their catalog, was to call it what the studio technicians were calling it. Thus the term Dinky Inkie became a well known trade name which never fails to provoke a smile when the layman first hears it.

He creates reality...

• Only a *model* wreck . . . but intensely *real* on the screen . . . thanks to the director of special effects.

Because of his ingenuity and inventive art, pictures are made that without him would be impossible. And when audiences exclaim, laugh, or sit in silence before stark drama, it's often an unknowing tribute to his imagination and technical skill . . . to his power to create reality.

But if he is to exercise this creative power to the full, he naturally requires superior film, perfectly adapted to the particular problem at hand. That's the reason why so many directors of special effects prefer to use Eastman Background-X, Eastman Fine Grain Duplicating Negative, Eastman Fine Grain Duplicating Positive, and other members of the large and well-known family of Eastman motion picture films.

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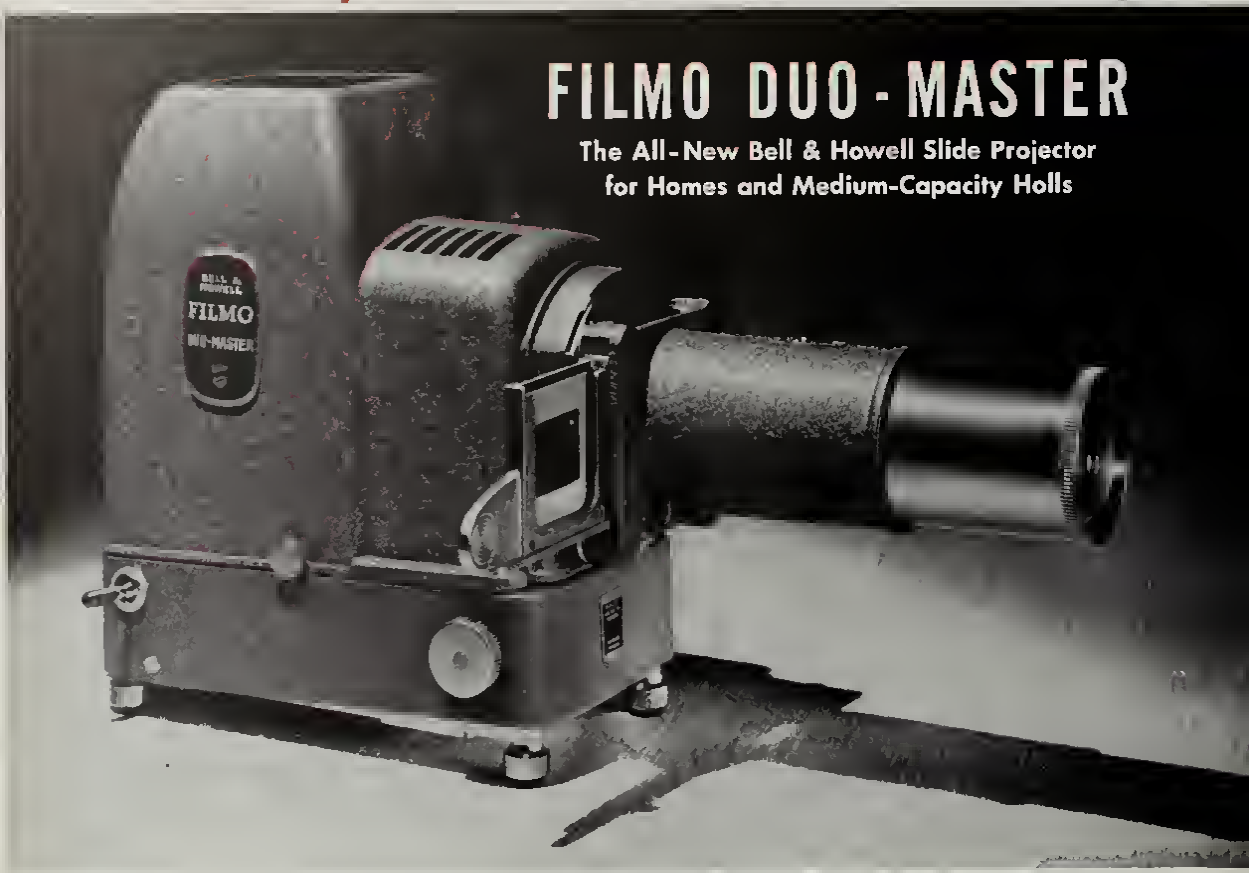

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The Duo-Master really *protects* your slides, too. Leave a slide in place indefinitely—it will not be damaged by heat.

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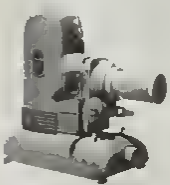
Stays Where You Put It. Won't "jump off the screen." Rubber feet and enough weight anchor the Duo-Master to the table.



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